

CLAIMS

1. Wheel set guidance assembly for suspending a wheel set bearing (10) of a wheel set (20) to a bogie frame (30), comprising individual vertical-, lateral and longitudinal guidance elements for independent guidance of the movement of the wheel set in vertical, lateral and longitudinal directions wherein the stiffness of each guidance element can be selected independently of the other guidance elements.
2. Wheel set guidance assembly according to claim 1, wherein the longitudinal guidance element is a longitudinally arranged wheel set linkage bar (40) for connecting the bogie frame (30) and the wheel set bearing (10) flexibly to allow guidance of a turning movement of the wheel set on curved tracks, wherein the longitudinal linkage bar (40) has a length extending towards a centre bogie console (100) in the longitudinal centre position of the bogie frame (30).
3. Wheel set guidance assembly according to claim 2, wherein the wheel set linkage bar (40) is connected to the longitudinal inward position of the wheel set bearing (10) with a flexible coupling.
4. Wheel set guidance assembly according to claims 2 or 3, wherein the wheel set linkage bar (40) is flexibly connected at about the height of the wheel set axle extending essentially horizontally to flexibly connect to the centre bogie console (100).
5. Wheel set guidance assembly according to any of claims 1 - 4, wherein the lateral guidance element is a spring element (60) of anisotropic stiffness engaging a guidance pin (70).
6. Wheel set guidance assembly according to claim 5, wherein the stiffness of the spring element (60) in the lateral direction is higher than the stiffness in the longitudinal and vertical direction.

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7. Wheel set guidance assembly according to claim 6, wherein the spring element (60) comprises rubber-metal elements arranged in lateral direction only.
8. Wheel set guidance assembly according to any of claims 5 - 7, wherein the guidance pin (70) is rigidly mounted in the bogie frame (30) protruding in the spring element (60) rigidly mounted on the wheel set bearing (10).
9. Wheel set guidance assembly according to any of claims 5 - 7, wherein the guidance pin (70) is rigidly mounted on the wheel set bearing (10) protruding in the spring element (60) rigidly mounted in the bogie frame (30).
10. Wheel set guidance assembly according to any of claims 1 - 9, wherein the vertical guidance element is at least one vertically arranged coil spring (50) connecting the wheel set bearing (10) and the bogie frame (30).
11. Wheel set guidance assembly according to claim 10, having two coil springs (50) on each side in longitudinal direction of the wheel set bearing and arranged next to the axle position
12. Wheel set guidance assembly according to claim 10 or 11, wherein one or both coil springs (50) are combined with a lateral guidance element comprising a spring element (60) of anisotropic stiffness positioned below, in or above the coil spring and engaging a guidance pin (70) positioned inside the coil spring.
13. Wheel set guidance assembly according to claim 1, wherein
- the longitudinal guidance element is a longitudinally arranged wheel set linkage bar (40) for connecting the bogie frame (30) and the wheel set bearing (10) flexibly to allow guidance of a turning movement of the wheel set on curved tracks, wherein the longitudinal linkage bar (40) has a length extending towards a centre bogie console (100) in the longitudinal centre position of the bogie frame (30), wherein

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- the vertical guidance element is at least one vertically arranged coil spring (50) connecting the wheel set bearing (10) and the bogie frame (30) and wherein the lateral guidance element is a spring element (60) of anisotropic stiffness engaging a guidance pin (70) .

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14. A bogie comprising a wheel set guidance assembly as defined in any one of claims 1 - 13.

15. The bogie according to claim 14 comprising two wheel sets both provided with a
10 wheel set guidance assembly according to any one of claims 1 - 13.

16. A method for providing a bogie with optimal wheel set guidance comprising the steps of :

- providing a bogie comprising a wheel set guidance assembly comprising individual
15 vertical-, lateral and longitudinal guidance elements and
- selecting the stiffness of each guidance element in vertical, lateral and longitudinal directions independently of the stiffness of the other guidance elements to optimise the wheel set guidance in view of the requirements of a particular application of the bogie.

20 17. The method according to claim 16, wherein the wheel set guidance assembly is the wheel set guidance assembly according to claims 1 - 13.

18. A method for guiding a wheel set of a bogie substantially as hereinbefore described having reference to the accompanying drawings.

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